ESC
European Society of Cardiology
European Heart Journal (2020) **00**, 1–80
doi:10.1093/eurheartj/ehaa605

ESC GUIDELINES

2020 ESC Guidelines on sports cardiology and exercise in patients with cardiovascular disease

The Task Force on sports cardiology and exercise in patients with cardiovascular disease of the European Society of Cardiology (ESC)

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Le versant rythmo

26ème soirée du Club Languedoc Roussillon des Cardiologues du Sport
Décembre 2020

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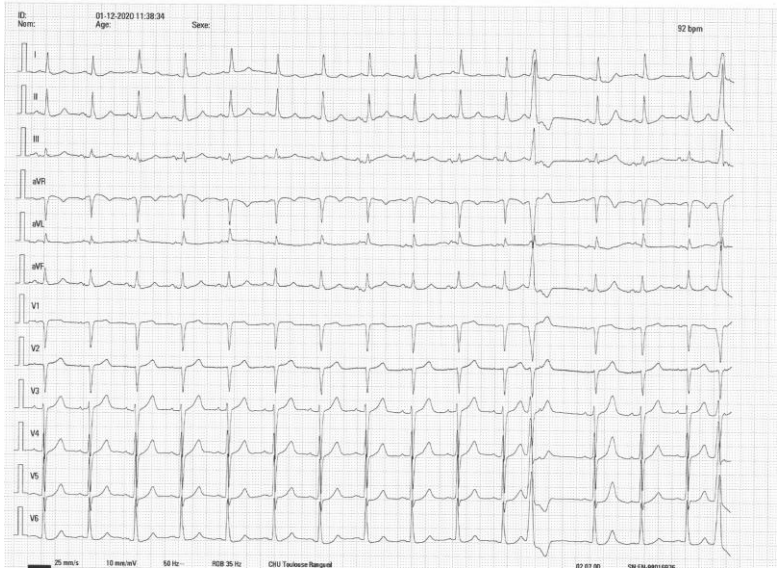
Rythmologie - Cardiologie du sport

Quelles sont les problématiques? De quoi a-t-on peur?

- Mort subite
- Cardiopathie/canalopathie sous jacente
- Aggravation cardiopathie/TDR par la pratique sportive
- Cardiopathie rythmique
- Symptômes repos/effort
- Contre indication/limitation de l’activité sportive

ESV

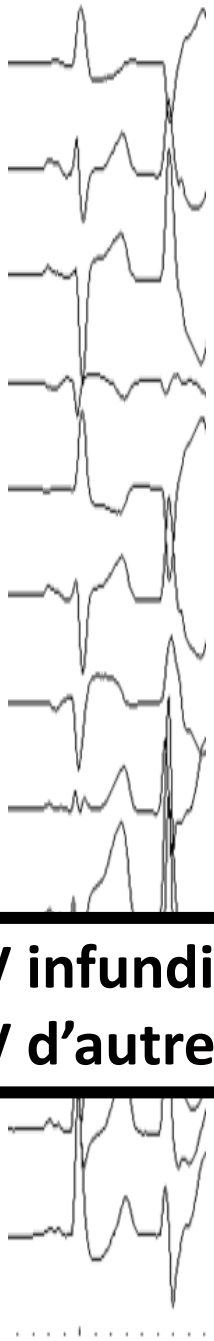


Bilan

Bilan chez l'athlète en ultra-endurance

Recommendations for exercise in individuals with premature ventricular contractions or non-sustained ventricular tachycardia

Recommendations	Class[a]	Level[b]
In exercising individuals with ≥2 PVCs on a baseline ECG (or ≥1 PVC in the case of high-endurance athletes) thorough evaluation (including a detailed family history) to exclude underlying structural or arrhythmogenic conditions is recommended.[503,522]	I	C



<u>Morpho</u>

- ESV
- Sinusal

Les ESV infundibulaires ne sont pas toutes bénignes
Les ESV d'autres morpho ne sont pas toutes malignes

Quel bilan?

Among individuals with frequent PVCs and non-sustained VT a thorough investigation with Holter monitoring, 12-lead ECG, exercise test, and suitable imaging is recommmended.[503]	I	C

Ne pas oublier l'interrogatoire:

- Atcd familiaux cardio, MS
- Baisse des capacités sportives
- Surentrainements (diag d'élimination mais à ne pas oublier!!!)

How to evaluate premature ventricular beats in the athlete: critical review and proposal of a diagnostic algorithm

Corrado D, *et al*. *Br J Sports Med* 2020;**54**:1142–1148.

Domenico Corrado,[1] Jonathan A Drezner,[2] Flavio D'Ascenzi ,[3] Alessandro Zorzi [1]

Table 3 Classification and risk stratification of premature ventricular beats in the athlete

	Common	Uncommon
PVB characteristics		
Ectopic QRS morphology	LBBB/inferior axis, typical RBBB and narrow QRS (<130 ms)	LBBB/intermediate or superior axis, atypical RBBB and wide QRS (≥130 ms)
Response to exercise testing	Decrease/suppression	Persistence/increase
Complexity of PVBs	Isolated, monomorphic	Repetitive‡, polymorphic
Short coupling interval*	No	Yes
Clinical findings		
Symptoms	No	Yes
Family history of premature SCD† or cardiomyopathy	No	Yes
Other ECG abnormalities	No	Yes
Imaging abnormalities	No	Yes

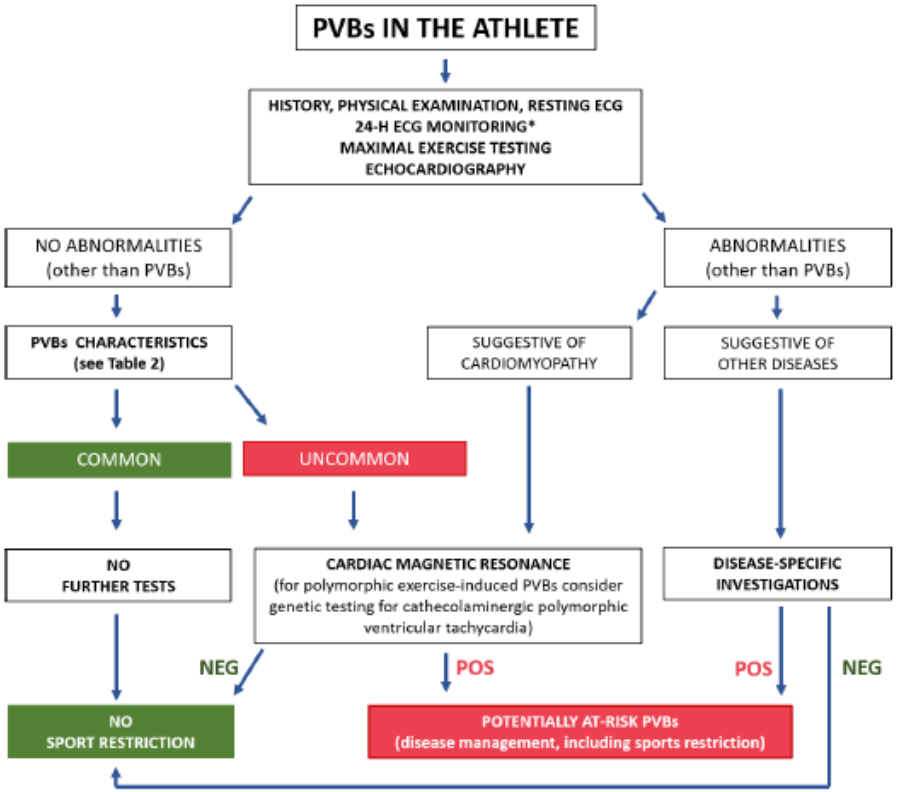


Figure 6 Proposed algorithm for evaluation of athletes with premature ventricular beats. *24-hour ECG monitoring should ideally have 12-lead configuration and include a training session. NEG,

Traitement

<u>Le plus souvent</u>: pas de cardiopathie, peu nombreuses, horaire vagal

Abstention, rassurer, et conseil sur stress, sommeil, charge d'entrainement

It is recommended that all competitive and leisure-time sports activities are permitted, with periodic re-evaluation in individuals without familial or structural underlying disease.[503]	I	C

<u>Parfois:</u> souhait d'un ttt (symptomatique): discussion ablation vs médicaments (IC contre indiqués chez athlète)

Recommendations for catheter ablation of idiopathic OT VA

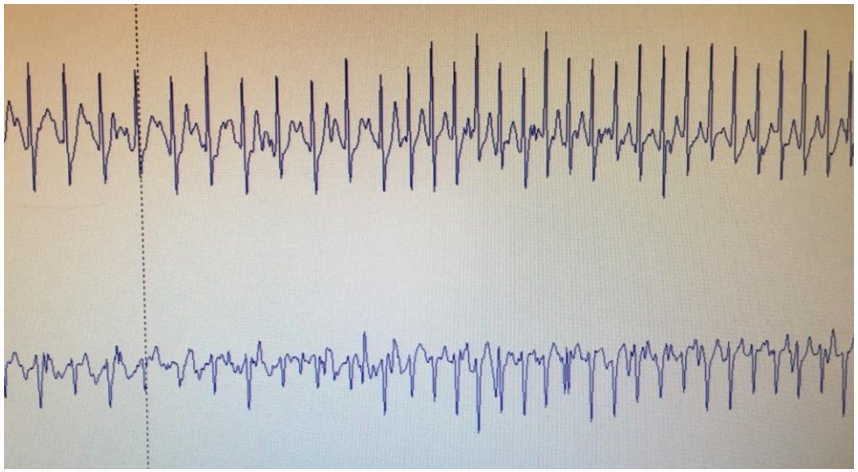
COR	LOE	Recommendations
I	B-R	1. In patients with frequent and symptomatic PVCs originating from the RVOT in an otherwise normal heart, catheter ablation is recommended in preference to metoprolol or propafenone.
I	B-NR	2. In patients with symptomatic VAs from the RVOT in an otherwise normal heart for whom antiarrhythmic medications are ineffective, not tolerated, or not the patient's preference, catheter ablation is useful.
I	B-NR	3. In patients with symptomatic idiopathic sustained monomorphic VT, catheter ablation is useful.
IIa	B-NR	4. In patients with symptomatic VAs from the endocardial LVOT, including the SV, in an otherwise normal heart for whom antiarrhythmic medications are ineffective, not tolerated, or not the patient's preference, catheter ablation can be useful.
IIa	B-NR	5. In patients with symptomatic VAs from the epicardial OT or LV summit in an otherwise normal heart for whom antiarrhythmic medications are ineffective, not tolerated, or not the patient's preference, catheter ablation can be useful.

ESC European Society of Cardiology
Europace (2019) 21, 1143–1144
doi:10.1093/europace/euz132
CONSENSUS STATEMENT

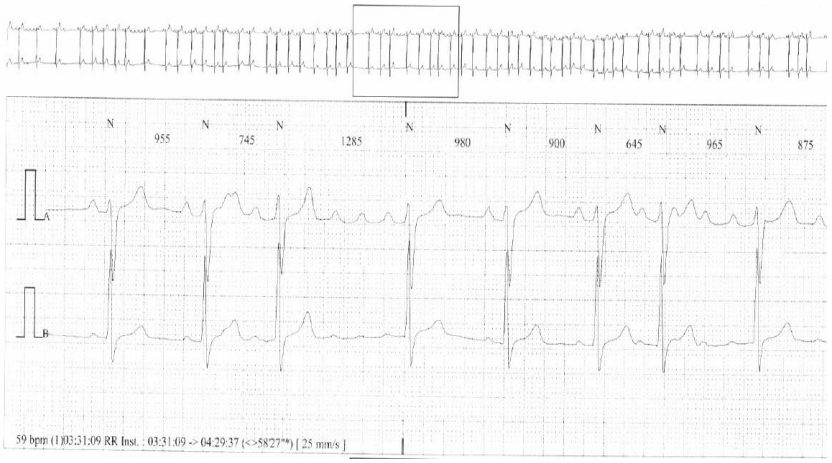
2019 HRS/EHRA/APHRS/LAHRS expert consensus statement on catheter ablation of ventricular arrhythmias

FA

40 ans, triathlète: Palpitations à l'effort gênant sa pratique

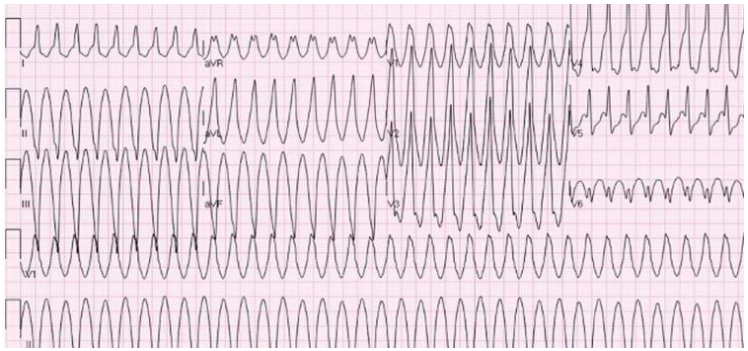


63 ans cycliste 15000km: Palpitations repos et post effort, rares



Evaluation and management of structural heart disease, thyroid dysfunction, alcohol or drug abuse, or other primary causes of AF is recommended before engaging in sports.[485]	I	A
AF ablation is recommended in exercising individuals with recurrent symptomatic AF, and/or in those who do not want drug therapy, given its impact on athletic performance.[488,489]	I	B
Participation in sports without antiarrhythmic therapy should be considered in individuals without structural heart disease, and in whom AF is well tolerated.	IIa	C

Cavo-tricuspid isthmus ablation should be considered in those with documented flutter who want to engage in intensive exercise, to prevent atrial flutter 1 : 1 atrioventricular conduction.	IIa	C
Prophylactic cavo-tricuspid isthmus ablation to prevent flutter should be considered in individuals with AF who want to engage in intensive exercise and in whom class I drug therapy is initiated.	IIa	C
After ingestion of pill-in-the-pocket flecainide or propafenone, participation in intensive sports is not recommended until two half-lives of the antiarrhythmic drug have elapsed (i.e. up to 2 days).[484]	III	C
Sports with direct bodily contact or prone to trauma are not recommended in exercising individuals with AF who are anticoagulated.[485]	III	A
Counselling about the effect of long-lasting intense sports participation on (recurrence of) AF is recommended in individuals with AF who exercise vigorously for prolonged periods, especially in middle-aged men.[471,475,481,490]	I	B



Effet proarythmogène ventriculaire

CHADSVAS

Ultra endurance RR X 5

(Abdullah europace 2009)

Réentrée nodale et faisceau accessoire

Les palpitations ça s'explore!

In individuals with palpitations, a comprehensive assessment to exclude (latent) pre-excitation, structural heart disease, and VAs is recommended.[500]	I	B

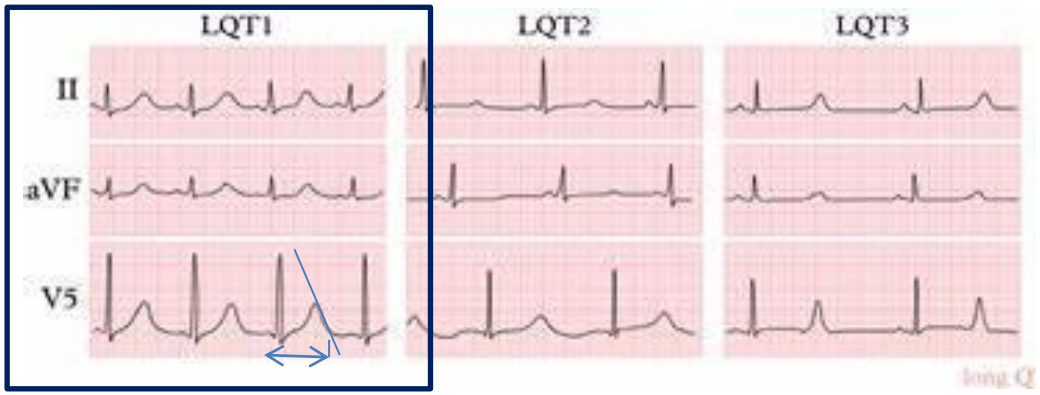
Pas de Kent: pas d'invasif et ttt selon symptômes

Participation in all sports activities is recommended in individuals PSVT without pre-excitation.[500]	I	C
In competitive athletes with PSVT but without pre-excitation, curative treatment by ablation should be considered.	IIa	C

Si Kent, explo EP:
- si risque ou tachy: ablation
- sinon discussion

In competitive/professional athletes with asymptomatic pre-excitation, an EP study is recommended to evaluate the risk for sudden death.[497,500]	I	B
Inducibility of AVRT or AF[499]		
A pre-excited R-R during AF ≤250 ms[498]		
An antegrade refractory period ≤250 ms[498]		
Presence of multiple accessory pathways[493]		
Septal location of the accessory pathway (mainly posteroseptal and midseptal)[493, 497]		

Syndrome QT long



Stress émotionnel et physique
Natation +++

- Formule de Bazett: QTc = Qt mesuré (ms) /√RR (s)
- Homme ≥ 470ms; Femme ≥ 480ms
- 20% des porteurs de mutations ont un QTc normal → Δ morphologie

- Bétabloquants
- Facteurs favorisants

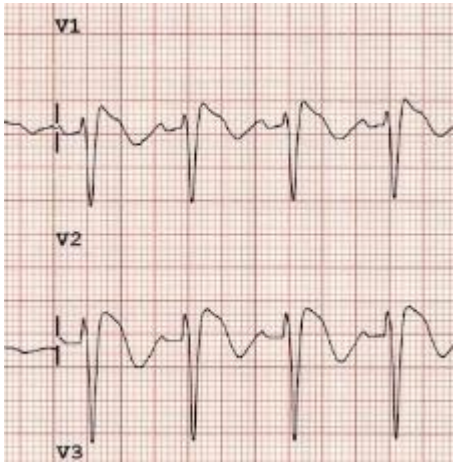
It is recommended that all exercising individuals with LQTS with prior symptoms or prolonged QTc be on therapy with beta-blockers at target dose.[529]	I	B
It is recommended that exercising individuals with LQTS should avoid QT prolonging drugs (www.crediblemeds.org) and electrolyte imbalance such as hypokalaemia and hypomagnesaemia.[529]	I	B

- Haute intensité et compétition:

  Plutôt non

Shared decision making should be considered regarding sports participation in patients with genotype-positive/phenotype-negative LQTS (i.e. <470/480 ms in men/women). Type and setting of sports (individual vs. team), type of mutation, and extent of precautionary measures should be considered in this context.	IIa	C
Participation in high-intensity recreational and competitive sports, even when on beta-blockers, is not recommended in individuals with a QTc>500 ms or a genetically confirmed LQTS with a QTc≥470 ms in men or ≥480 ms in women.	III	B
Participation in competitive sports (with or without ICD) is not recommended in individuals with LQTS and prior cardiac arrest or arrhythmic syncope.	III	C

Syndrome de Brugada



Pourquoi pas chez l'asymptomatique

In asymptomatic individuals with BrS, asymptomatic mutation carriers and asymptomatic athletes with only an inducible ECG pattern, participation in sports activities that are not associated with an increase in core temperature >39°C (e.g. endurance events under extremely hot and/or humid conditions) may be considered.	IIb	C
Prescription of drugs that may aggravate BrS[c], electrolyte abnormalities, and sports practice that increases core temperature >39°C are not recommended in individuals with overt BrS or phenotypically negative mutation carriers.	III	C

Conclusion

- Tout point d'appel rythmo impose un bilan
  - Mise en évidence du TDR
  - Recherche de cardiopathie +++
- En l'absence de cardiopathie, TDR souvent vagal, risque très faible, pas de contre indication au sport. Eviction des facteurs favorisants et traitement selon symptômes.
- Très peu de CAT unique! discussion avec le patient sur le tryptique bénéfice-risque-contraintes des traitements